

IN THE CLAIMS

1. (Previously presented) A method, for use in a virus-free certificate authority, of generating a virus-free certificate certifying that a file is virus-free comprising the steps of:

- receiving a virus-free certificate request for a file from a server or a client system, said virus-free certificate request comprising the file for which the virus-free certificate is requested;
- determining whether a virus-free certificate is integrated in the file;

If no virus-free certificate is integrated in the file:

- determining whether the file is virus-free or not;

if the file is declared virus-free by the virus-free certificate authority:

- generating a virus-free certificate comprising a file signature for certifying that said file is declared virus-free by the virus-free certificate authority;
- integrating the generated virus-free certificate in the file;
- sending back in response to the virus-free certificate request the file with the integrated virus-free certificate.

2. (Canceled)

3. (Previously presented) The method according to claim 1 wherein said file comprised in the virus-free certificate request comprises:

- an integrated virus-free certificate.

4. (Previously presented) The method according to claim 1 comprising the further steps of:

If the file comprises an integrated virus-free certificate:

- determining whether the virus-free certificate integrated in the file has been previously generated by the virus-free certificate authority.

If the virus-free certificate integrated in the file has been previously generated by the virus-free certificate authority:

- updating the virus-free certificate.

If the virus-free certificate integrated in the file has not been previously generated by the virus-free certificate authority:

- generating a new virus-free certificate.

5. (Previously presented) The method according to claim 1 wherein said file further comprises:

- a file header comprising:
- a non encrypted file signature;
- a file length;
- a product name.

6. (Previously presented) The method according to claim 1 wherein said step of integrating the virus-free certificate in the file comprises the further steps of:

- appending the virus-free certificate to the file;
- modifying a file header, preferably:
- a non encrypted file signature;
- a file length;
- a product name, said product name comprising means for identifying the integrated virus-free certificate.

7. (Previously presented) The method according to claim 1 wherein said step of determining whether the file is virus-free or not comprises the further step of:

- executing one or a plurality of anti-virus programs on said file for detecting viruses.

8. (Previously presented) The method according to claim 1 wherein the virus-free certificate further comprises:

- a list of the one or plurality of anti-virus programs that have been executed on the file.

9. (Previously presented) The method according to claim 1 wherein the virus-free certificate further comprises:

- a file identification;
- a virus-free certificate authority identification;
- a public key for decrypting the file signature;
- a certificate signature for authenticating the virus-free certificate.

10. (Previously presented) The method according to claim 1 comprising the further steps of:

- identifying the server or client system where the file comprising the integrated virus-free certificate is stored;
- updating the file with the integrated virus-free certificate.

11. (Previously presented) The method according to claim 1 wherein the step of generating a file signature comprises the further steps of:

- hashing the file to generate a file digest;
- encrypting the file digest using a private key.

12. (Previously presented) A system implementing a virus-free certificate authority, said system comprising a processor that executes a program for implementing a method comprising the steps of:

- receiving a virus-free certificate request for a file from a server or a client system, said virus-free certificate request comprising the file for which the virus-free certificate is requested;

- determining whether a virus-free certificate is integrated in the file;

If no virus-free certificate is integrated in the file:

- determining whether the file is virus-free or not;

if the file is declared virus-free by the virus-free certificate authority:

- generating a virus-free certificate comprising a file signature for certifying that said file is declared virus-free by the virus-free certificate authority;

- integrating the generated virus-free certificate in the file;

sending back in response to the virus-free certificate request the file with the integrated virus-free certificate.

13. (Previously presented) A computer program recorded on a computer-readable medium and comprising instructions executing a method comprising the steps of:

- receiving a virus-free certificate request for a file from a server or a client system, said virus-free certificate request comprising the file for which the virus-free certificate is requested;

- determining whether a virus-free certificate is integrated in the file;

If no virus-free certificate is integrated in the file:

- determining whether the file is virus-free or not;

if the file is declared virus-free by the virus-free certificate authority:

- generating a virus-free certificate comprising a file signature for certifying that said file is declared virus-free by the virus-free certificate authority;

- integrating the generated virus-free certificate in the file;

sending back in response to the virus-free certificate request the file with the integrated virus-free certificate.

14. (Previously presented) A method, for use in a server or client system, of determining that a file is virus-free comprising the steps of:

- determining whether a virus-free certificate is integrated within a file;
if a virus-free certificate is integrated within the file:
- authenticating the virus-free certificate, said virus-free certificate comprising a certificate signature;
- authenticating the file, said virus-free certificate comprising a file signature, said file signature certifying that said file has been declared virus-free by a virus-free certificate authority.

15. (Previously presented) The method according claim 14 wherein said step of authenticating the file comprises the further steps of:

- decrypting the file signature using a public key comprised in the virus-free certificate.
- hashing the file to generate a file digest;
- comparing the decrypted file signature with the generated file digest.

16. (Previously presented) The method according to claim 14 wherein the step of authenticating the virus-free certificate comprises the further step of:

- validating the virus-free certificate.

17. (Previously presented) The method according to claim 16 wherein the step of validating the virus-free certificate comprises the further step of:

- determining whether the virus-free certificate is valid or not;

If the virus-free certificate is not valid:

- requesting a virus-free certificate update or an updated virus-free certificate update to a virus-free certificate authority.

18. (Previously presented) The method according to claim 14 wherein the virus-free certificate further comprises:

- a file identification;
- a virus-free certificate authority identification;
- a public key for decrypting the file signature.

19. (Previously presented) The method according to claim 14 wherein said file further comprises:

- a file header comprising:
- a non encrypted file signature for signing the file;
- a file length;
- a product name, said product name comprising means for identifying the integrated virus-free certificate.

20. (Previously presented) The method according to claim 14 wherein the step of determining whether a virus-free certificate is integrated within a file comprises the further step of:

- determining whether a product name within a file header comprises means for identifying the integrated virus-free certificate or not.

21. (Previously presented) A system having a processor that determines that a file is virus-free, said processor executing a program for implementing a method having steps of:

- determining whether a virus-free certificate is integrated within a file;
if a virus-free certificate is integrated within the file:
- authenticating the virus-free certificate, said virus-free certificate comprising a certificate signature;
- authenticating the file, said virus-free certificate comprising a file signature, said file signature certifying that said file has been declared virus-free by a virus-free certificate authority.

22. (Previously presented) A computer program recorded on a computer-readable medium and comprising instructions executing a method having steps of:

- determining whether a virus-free certificate is integrated within a file;
if a virus-free certificate is integrated within the file:
- authenticating the virus-free certificate, said virus-free certificate comprising a certificate signature;
- authenticating the file, said virus-free certificate comprising a file signature, said file signature certifying that said file has been declared virus-free by a virus-free certificate authority.

23. (Previously presented) A method, for use in a virus-free certificate authority, of generating a virus-free certificate certifying that a file is virus-free comprising the steps of:

- receiving a virus-free certificate request for a file from a server or a client system, said virus-free certificate request comprising the file for which the virus-free certificate is requested and a list of one or a plurality of anti-virus programs to execute on the file to determine whether the file is virus-free or not;
- determining whether a virus-free certificate is integrated in the file;
if no virus-free certificate is integrated in the file:
- determining whether the file is virus-free or not;
if the file is declared virus-free by the virus-free certificate authority:

- generating a virus-free certificate comprising a file signature for certifying that said file is declared virus-free by the virus-free certificate authority;
 - integrating the generated virus-free certificate in the file;
- sending back in response to the virus-free certificate request the file with the integrated virus-free certificate.